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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,119	11/27/2001	Erich Schaarschmidt	298-148	9758

28249 7590 02/28/2006

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EXAMINER	
CHOI, PETER H	
ART UNIT	**PAPER NUMBER**
3623	

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/995,119	SCHAARSCHMIDT, ERICH	
	Examiner	Art Unit	
	Peter Choi	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/27/01*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a first office action upon examination of application number 09/995,119. The Examiner is using claims submitted by the Applicant on May 6, 2002. Claims 1-20 are pending in the application and have been examined on the merits discussed below.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 2-5, 7-9, and 13-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 2, 3, 4, 5, 7, 8, 9, 13, 14, 15, 16, 17, 18, and 19 cite the use of a CAD system. Assuming that the CAD system is a Computer Aided Design system, the claims do not provide the necessary structure (no computer, processor, etc.), thus one of ordinary skill in the art would not be enabled to make and/or use the claimed invention.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The second paragraph of 35 USC 112 requires a claim to particularly point out and distinctly claim the subject matter which the appellant regards as his invention. However, the "invention" referred to in the second paragraph of 35 USC 112 is also subject to the requirements of 35 USC 101. This section of the statute requires that in order to be patentable the invention must be a "new and useful process, machine, manufacture, *or* composition of matter, *or* any new and useful improvement thereof". A claim intended to embrace or overlap *two* different statutory classes of invention set forth in 35 USC 101 is precluded by the express language of 35 USC 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. A single claim which purposes to be both a product or machine and a process is ambiguous and is properly rejected under 35 USC 112, second paragraph, for failing to particularly point out and distinctly claim the invention. *Ex parte Lyell*, USPQ. 2d (Board of Aptent Appeals and Interferences) 1548, 1551.

A single claim which claims both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. In *Ex parte Lyell*, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990).

In this case, Claims 6-13 and 19-20 are apparatus claims; however, they are dependent on process claims. The Examiner recommends that the Applicant rewrite claim 6 (and all claims dependent therein) in independent form.

Claim 1 recites an ERP system with ERP parameters, and Claim 2 recites a CAD system with CAD parameters. These acronyms are presented in the specification and claims. While ERP is disclosed as an Enterprise Resource planning system, no such disclosure is made with regards to the CAD system. The Examiner suggests that the Applicant spell out the abbreviations/acronyms ERP and CAD in their entirety the first time it is introduced in the claims. For examining purposes, the Examiner has assumed that ERP is a reference to Enterprise Resource Planning and that CAD is a reference to Computer Aided Design.

In lines 1-3 of claims 4, 15, and 16, the claim limitation reads that the data flow between the ERP system and the CAD system, on the one hand, and between a production control center, on the other hand. It is unclear as to which system interacts with the production control center. The Examiner has assumed that data flows between the ERP system and the CAD system, and also between the ERP system and a production control center.

Regarding Claim 6, the central control unit as claimed is merely configured to ("can") link a plurality of data processing units; however the system does not actually link said data processing units. For the purposes of examination, the examiner assumes the applicant will amend the claim to recite that the central control unit actually links with the plurality of data processing units.

Regarding Claim 7, the central control unit as claimed is merely configured to ("can") connect with a CAD system; however the system does not actually connect to a CAD system. For the purposes of examination, the examiner assumes the applicant will amend the claim to recite that the central control unit actually connects with a CAD system.

Claim 20 is dependent on claim 7 and is also rejected.

Regarding Claim 9, the central control unit as claimed is merely configured to ("can") connect with a product control center; however the system does not actually connect to a product control center For the purposes of examination, the examiner assumes the applicant will amend the claim to recite that the central control unit actually connects with a product control center.

Claim 18 is rejected for the same reason.

Regarding Claim 13, the CAD parameters as claimed are merely configured to ("can") be used to generate a CAD drawing; however the system does not actually connect to a CAD system. For the purposes of examination, the examiner assumes the applicant will amend the claim to recite that the CAD drawing is actually generated by the CAD parameters.

Regarding Claim 19, the central control unit as claimed is merely configured to ("can") be connected with a product control center; however the system does not actually connect to a CAD system. For the purposes of examination, the examiner assumes the applicant will amend the claim to recite that the central control unit is actually connected to a product control center.

Use of words like "may" and "can" imply that the recited steps are optional, thereby rendering the scope of claim 6, 7, 9, and 13 indefinite.

Claims 8, 10, 11, and 12 are dependent on claims 6 and 7 and are also rejected.

8. Claims 3, 4, 9, 14, 15, and 18 recite the limitation "the CAD system". There is insufficient antecedent basis for this limitation in the claim.

Claims 3 and 4 are dependent on independent process claim 1. Claim 1 does not cite a CAD system. Similarly, claim 9 is dependent on claim 6, which also does not cite a CAD system.

Claims 5 and 16 (which are dependent on claim 3), and claim 17 (which is dependent on claim 4) and are also rejected.

Claims 14 and 15 are dependent on process claim 2. Claim 2 only cites a set of CAP parameters, but never actively cites a CAD system.

Claim 18 is dependent on device claim 6, which does not cite a CAD system.

9. Claims 3, 4, 9, 14, 15, and 18 recites the limitation "the CAD parameters". There is insufficient antecedent basis for this limitation in the claim.

Claims 3 and 4 are dependent on independent process claim 1. Claim 1 does not cite CAD parameters. Similarly, claim 9 is dependent on claim 6, which also does not cite CAD parameters.

Claims 5 and 16 (which are dependent on claim 3), and claim 17 (which is dependent on claim 4) and are also rejected.

Claims 14 and 15 are dependent on process claim 2. Claim 2 only cites a set of CAP parameters, but never actively cites a CAD system.

Claim 18 is dependent on device claim 6, which does not cite a CAD system.

10. Claim 8 recites the limitation "the current dependency". There is insufficient antecedent basis for this limitation in the claim. No reference to a current dependency between ERP and CAD parameters is found in claims 6 or 7.

11. Claim 9 recites the limitation "product control center (5)" in line 2. There is insufficient antecedent basis for this limitation in the claim. The Examiner has assumed that the Applicant intended to cite product***ion*** control center (5).

12. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: how "the current dependency" between the ERP and CAD parameters are determined and what is used to store said dependency.

Examination of claims 1-20 will be made based on Examiner's best understanding of the claims, in view of the specification.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claim 6 is rejected under 35 U.S.C. 102(e) as being anticipated by Kudo et al. (PgPub US2001/0042092).

As per claim 6, Kudo et al. teaches a device for carrying out the process according to claim 1 for control of the automatic data flow between data processing units for order processing for a variant product, which device comprises:

at least one ERP system **(integrated transaction package {hereinafter, referred to as an "ERP"} system 10)** for resource planning for the order processing [Paragraph 50]; as well as

an order preparation unit **(sales force automation {hereinafter referred to as an "SFA") system 30)** for preparing the current order [Paragraph 50]; with

a central control unit **(intersystem collaboration object 40)** that can be linked with each of the data processing units **(ERP system 10, SCM system 20 and SFA system 30 are combined through an intersystem collaboration object 40)**, wherein the central control unit has a memory in which a set of product variables is held ready **(collaboration information storage table 41 stores collaboration information; collaboration information storage table 41 stores, as collaboration information, paths for transactions transmitted among the ERP system 10, the SCM system 20, and the SFA system 30)**, wherein the central control unit has data linkage means that links the ERP parameters required by the ERP system to process the current order with

the set of product variables **(intersystem collaboration object 40 and the collaboration information storage table 41 constitute the collaboration apparatus between information processing systems)**, wherein the central control unit has control means that assign the values retrieved by the order preparation unit for the product variables to the set of product variables such that a set of specific product parameters is produced **(intersystem collaboration object 40 receives request to generate role object for collaboration from SFA system 30, and generates active role 51 as an object corresponding to SFA system 30 and passive role 52 as an object corresponding to ERP system 10)** and said central control unit also automatically generates a set of ERP parameters in a data format compatible with the ERP system from the set of specific product parameters and forwards the same to the ERP system **(ERP system 10 receives data representing to the contents of the order that is transmitted from SFA system 30 to ERP system 10)** [Paragraphs 50, 51, 56, 62].

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 1-4, 6, 10-11, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kudo et al. (PGPub US2001/0042092).

As per claim 1, Kudo et al. teaches a process for control of automatic data flow between data processing units for processing orders related to variant products, comprising:

at least one ERP system **(integrated transaction package {hereinafter, referred to as an "ERP"} system 10)** for resource planning for the order processing [Paragraph 50]; as well as

one order preparation unit **(sales force automation {hereinafter referred to as an "SFA") system 30)** for preparation of the order to be processed **(SFA system 30 supports a person in charge of business, and has functions of a help desk, sales prediction, contact management, and the like)**, wherein a set of product variables **(an order for goods from a customer)** is held ready by a central control unit **(intersystem collaboration object 40)** for the appropriate variant product, wherein the order preparation unit assigns the values retrieved for the product variables to the set of product variables so that a set of customer-specific product parameters is produced **(SFA system 30 specifies data which the SFA system 30 desires to transmit as a transaction; data representing the contents of the order received from the customer in the SFA system 30 is specified)**, and wherein a set of ERP parameters that the ERP system needs for processing the order is automatically generated from the set of specific product parameters and the same are forwarded to the ERP system by

the central control unit **(ERP system 10 receives data representing to the contents of the order that is transmitted from SFA system 30 to ERP system 10)** [Paragraphs 50, 54, 65, 66, 67].

Kudo et al. does not explicitly teach the step of generating product parameters suitable for the ERP system. However, it is implied that the data transmitted from SFA system 30 is indeed in a suitable data format for ERP system 10.

Furthermore, Official Notice is taken that the step of translating and transforming different data formats for use in different data processing systems is old and well known in the computing arts. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include the step of providing product parameters in a data format suitable for the ERP system because the resulting combination would result in quicker access to the latest product information and tools, which result in a more rapid turnaround of product design alternatives, and also enables collaboration with external parties for subcontracting (or alternatively, to serve as an external party or subcontractor).

As per claim 2, Kudo et al. does not explicitly teach the process according to claim 1 wherein a set of CAD parameters that a CAD system requires to process an order is automatically generated by the central control unit from the customer-specific

product parameters previously produced in the data format compatible with the CAD system and forwarded from the central control unit to the CAD system.

Official Notice is taken that it is old and well known in the manufacturing arts that CAD systems have been used to develop and view product designs. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include a set of CAD parameters, because the resulting combination would enable drawings, product visuals, and other graphical information to be shared between the plurality of systems involved in the manufacture of a product.

Furthermore, Official Notice is taken that the step of translating and transforming different data formats for use in different data processing systems is old and well known in the computing arts. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include the step of providing product parameters in a data format suitable for the ERP system because the resulting combination would result in quicker access to the latest product information and tools, which result in a more rapid turnaround of product design alternatives, and also enables collaboration with external parties for subcontracting (or alternatively, to serve as an external party or subcontractor).

As per claim 3, Kudo et al. teaches the process according to claim 1 wherein the set of variables held ready by the central control unit is determined based on the ERP

parameters required by the ERP system **(SFA system 30 specifies data which the SFA system desires to transmit as a transaction; data representing the contents of the order received from the customer in the SFA system 30 is specified)** wherein corresponding and/or dependent ERP parameters are linked to a variable in the central control unit **(transaction is a generic name for data transmitted among systems, which is a concept containing arbitrary data such as a character string and a file; data passed as a transaction consists of an attribute tag T_n, an update flag F_n, and a data part D_n)** [Paragraphs 59, 65, 77].

As mentioned above, Kudo et al. does not explicitly teach the use of CAD parameters or CAD systems. However, Official Notice is taken that it is old and well known in the manufacturing arts that CAD systems have been used to develop and view product designs. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include a set of CAD parameters, because the resulting combination would enable drawings, product visuals, and other graphical information to be shared between the plurality of systems involved in the manufacture of a product.

Claim 14 recites limitations already addressed by the rejection of claim 3 above; therefore, the same rejection applies

As per claim 4, Kudo et al. teaches the process according to claim 1, wherein the data flow between the ERP system and a production control center **(supply chain management {hereinafter, referred to as an "SCM"} system 20)**, is controlled by the central control unit **(intersystem collaboration object 40 allows ERP system 10, SCM system 20 and the SFA system 30 to collaborate with each other by referring to the collaboration information in the collaboration information storage table 41)**, wherein a set of production parameters required by the production control center for processing the order is generated by the central control unit from the data retrieved from the order preparation unit, the data prepared by the ERP system **(ERP system 10 specifies data which the ERP system 10 desires to transmit as a transaction)**, and is forwarded automatically to the production control center by the central control unit **(SCM system 20 receiving data from the ERP system 10)** [Paragraphs 50, 51, 72, 74].

As mentioned above, Kudo et al. does not explicitly teach the use of CAD systems and parameters. Official Notice is taken that it is old and well known in the manufacturing arts that CAD systems have been used to develop and view product designs. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include a set of CAD parameters, because the resulting combination would enable the user to construct a visual product design based on a set of received production parameters and would also

enable drawings, product visuals, and other graphical information to be shared between the plurality of systems involved in the manufacture of a product.

Kudo et al. does not explicitly teach the step of generating product parameters suitable for the ERP system. However, it is implied that the data transmitted from SFA system 30 is indeed in a suitable data format for ERP system 10.

Furthermore, Official Notice is taken that the step of translating and transforming different data formats for use in different data processing systems is old and well known in the computing arts. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include the step of providing product parameters in a data format suitable for the ERP system because the resulting combination would result in quicker access to the latest product information and tools, which result in a more rapid turnaround of product design alternatives, and also enables collaboration with external parties for subcontracting (or alternatively, to serve as an external party or subcontractor).

Claims 15 and 16 recite limitations already addressed by the rejection of claim 4 above; therefore, the same rejection applies

As per claim 10, Kudo et al. teaches a device according to claim 6, wherein order simulation means **(stock management subsystem 10c)** are provided that generates

an order simulation query to the ERP system based on the set of product parameters and forwards supply data, such as delivery data, price, etc., that the ERP system supplies as a function of the order simulation query, to the order preparation unit **(ERP system 10 is composed of a plurality of subsystems, such as stock management subsystem 10c, which confirms the presence/absence of the stock of ordered goods. In the case where the stock of the goods has run out, the production collaboration subsystem 10d creates data for requesting the production of the goods to request collaboration with the SCM system 20)** [Paragraph 52].

As per claim 11, Kudo et al. teaches a device according to claim 10, wherein online connection and communication are provided between the order simulation means and the order preparation unit **(intersystem collaboration object 40 and the collaboration information storage table 41 constitute the collaboration apparatus between information processing systems)** [Paragraph 51].

17. Claim 5, 7-9, 12-13, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kudo et al. (PGPub US2001/0042092) as applied to claim 1 above, and further in view of Dan Deitz's "Customer-driver product delivery" (reference 1-U; hereinafter referred to as Deitz).

As per claim 5, Kudo et al. does not explicitly teach the process according to claim 3 wherein only the CAD parameters previously generated are stored and/or managed in the central control unit and are re-prepared again at need each time.

Deitz discloses PTC's ProENGINEER and Pro/MANUFACTURING, parametric CAD/CAM systems that provide family tables, which enable engineers to manage design parameters that may change. By modifying relevant parameters, engineers can automatically generate a customized version of a generic design [Paragraph 9].

Both Kudo et al. and Deitz are directed towards the art of designing and manufacturing customized product orders. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include the step of storing previously generated CAD parameters, because the resulting combination would enable users to update toolpaths, assembly drawings, and replace generic engineering instances with specific customer-specified ones, actions that will result in an increase in the user's productivity and a reduction in the design cycle time.

Claim 17 recites limitations already addressed by the rejection of claim 5 above; therefore, the same rejection applies

As per claim 7, Kudo et al. does not explicitly teach a device according to claim 6 wherein the central control unit can be connected with a CAD system wherein the data linkage means links CAD parameters with the set of product variables, which CAD parameters are required by the CAD system for processing the current order, and wherein the control means of the central control unit automatically generates a specific set of CAD parameters in a data format compatible with the CAD system from the set of specific product parameters previously produced and forwards the same to the CAD system.

However, Kudo et al. does provide intersystem collaboration object 40, which, combined with collaboration information storage table 41, constitute the collaboration apparatus between information processing systems [Paragraph 51].

Deitz discloses PTC's ProENGINEER and Pro/MANUFACTURING, parametric CAD/CAM systems that provide family tables, which enable engineers to manage design parameters that may change. By modifying relevant parameters, engineers can automatically generate a customized version of a generic design [Paragraph 9]. The modified parameters are inherently linked to product order specifications; thus the CAD and product variable parameters are linked.

Both Kudo et al. and Deitz are directed towards the art of designing and manufacturing customized product orders. Therefore, it would have been obvious to one

of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include the step of storing previously generated CAD parameters, because the resulting combination would enable users to update toolpaths, assembly drawings, and replace generic engineering instances with specific customer-specified ones, and enable said toolpaths, and assembly drawings to be shared between the plurality of systems involved in the manufacture of a product, actions that will result in an increase in the user's productivity and a reduction in the design cycle time.

Furthermore, Official Notice is taken that the step of translating and transforming different data formats for use in different data processing systems is old and well known in the computing arts. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include the step of providing product parameters in a data format suitable for the ERP system because the resulting combination would result in quicker access to the latest product information and tools, which result in a more rapid turnaround of product design alternatives, and also enables collaboration with external parties for subcontracting (or alternatively, to serve as an external party or subcontractor).

As per claim 8, Kudo et al. does not explicitly teach a device according to claim 7 wherein the data linkage means comprises a logic module that assigns only one common product variable to the corresponding and/or dependent ERP parameters **(when a person in charge of business receives an order for goods, SFA system**

30 requests that the intersystem collaboration object 40 to generate a role object for collaboration with the ERP system 10, intersystem collaboration system 40 generating a passive role 52 as an object corresponding to the ERP system 10 that is a collaboration target) [Paragraphs 61, 62].

Kudo et al. does not explicitly teach the use of CAD parameters, the step of storing the current dependency between the ERP and CAD parameters, or the step of determining the current ERP or CAD parameters from the corresponding product variables that have been assigned variables using the related stored dependencies.

Deitz discloses PTC's ProENGINEER and Pro/MANUFACTURING, parametric CAD/CAM systems that provide family tables, which enable engineers to manage design parameters that may change. By modifying relevant parameters, engineers can automatically generate a customized version of a generic design [Paragraph 9]. The modified parameters are inherently linked to product order specifications (an ERP parameter); thus the dependency between the ERP and CAD systems have been determined and stored.

CAD systems inherently require the use of computers and related computing structures; thus, the parametric CAD/CAM systems disclosed by Deitz inherently contain the logic (computer code and/or software) to perform the functionality provided.

Both Kudo et al. and Deitz are directed towards the art of designing and manufacturing customized product orders. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include the step of storing previously generated CAD parameters, because the resulting combination would enable users to update toolpaths, assembly drawings, and replace generic engineering instances with specific customer-specified ones, and enable said toolpaths, and assembly drawings to be shared between the plurality of systems involved in the manufacture of a product, actions that will result in an increase in the user's productivity and a reduction in the design cycle time.

As per claim 9, Kudo et al. teaches a device according to claim 6 wherein the central control unit can be connected with a product control center **(supply chain management {hereinafter, referred to as an "SCM"} system 20)**, where a set of production control variables is held ready in the memory **(collaboration information storage table 41 stores collaboration information; collaboration information storage table 41 stores, as collaboration information, paths for transactions transmitted among the ERP system 10, the SCM system 20, and the SFA system 30)** and the data linkage means is formed for linkage of the production control variables with and the ERP parameters of the ERP system **(intersystem collaboration object 40 and the collaboration information storage table 41 constitute the collaboration apparatus between information processing systems)**, wherein the central control unit comprises control means that generates a set of production parameters required by

the production control center for processing the order **(ERP system 10 specifies data which the ERP system 10 desires to transmit as a transaction)** from the data retrieved from the ERP system and/or from the data held ready in the CAD system, and automatically forwards the same to the production control center **(SCM system 20 receiving data from the ERP system 10)** [Paragraphs 50, 51, 72, 74].

Kudo et al. does not explicitly teach the step of generating product parameters suitable for the ERP system. However, it is implied that the data transmitted from SFA system 30 is indeed in a suitable data format for ERP system 10.

Furthermore, Official Notice is taken that the step of translating and transforming different data formats for use in different data processing systems is old and well known in the computing arts. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include the step of providing product parameters in a data format suitable for the ERP system because the resulting combination would result in quicker access to the latest product information and tools, which result in a more rapid turnaround of product design alternatives, and also enables collaboration with external parties for subcontracting (or alternatively, to serve as an external party or subcontractor).

As mentioned above, Kudo et al. does not explicitly teach the step of linking production control variables with the CAD parameters of the CAD system. However, Deitz discloses PTC's ProENGINEER and Pro/MANUFACTURING, parametric

CAD/CAM systems that provide family tables, which enable engineers to manage design parameters that may change. By modifying relevant parameters, engineers can automatically generate a customized version of a generic design [Paragraph 9]. The modified parameters are inherently linked to product order specifications; thus the CAD and product variable parameters are linked.

Both Kudo et al. and Deitz are directed towards the art of designing and manufacturing customized product orders. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include the step of storing previously generated CAD parameters, because the resulting combination would enable users to update toolpaths, assembly drawings, and replace generic engineering instances with specific customer-specified ones, and enable said toolpaths, and assembly drawings to be shared between the plurality of systems involved in the manufacture of a product, actions that will result in an increase in the user's productivity and a reduction in the design cycle time.

Claim 18 and 19 recite limitations already addressed by the rejection of claim 9 above; therefore, the same rejection applies

As per claim 12, Kudo et al. does not explicitly teach a device according to claim 6, wherein the order preparation unit comprises a visualization unit for display of the variant product that comprises, in turn, a storage unit in which a parameterized model of

the variant product is stored, wherein the visualization unit fills the variables of the parameterized model with data retrieved for the variant product, and displays the variant product based on variables determined in this manner.

Deitz discloses PTC's ProENGINEER and Pro/MANUFACTURING, parametric CAD/CAM systems that provide family tables, which enable engineers to manage design parameters that may change. By modifying relevant parameters, engineers can automatically generate a customized version of a generic design [Paragraph 9]. Since said parametric CAD/CAD systems are interactive in nature, they inherently require a visualization display unit.

Both Kudo et al. and Deitz are directed towards the art of designing and manufacturing customized product orders. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include visualization units and the step of storing previously generated CAD parameters, because the resulting combinations would enable users to update toolpaths, design and view product assembly drawings, and replace generic engineering instances with specific customer-specified ones, actions that will result in an increase in the user's productivity and a reduction in the design cycle time.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include a visualization unit because

the resulting combination would provide a means for visually displaying product models, which can be reviewed by technicians.

Claim 20 recites limitations already addressed by the rejection of claim 12 above; therefore, the same rejection applies

As per claim 13, Kudo et al. does not explicitly teach a device according to claim 6, wherein only the previously-generated CAD parameters, based on which a CAD drawing can be generated, are stored in the memory of the central control unit instead of a complete CAD drawing.

Deitz discloses PTC's ProENGINEER and Pro/MANUFACTURING, parametric CAD/CAM systems that provide family tables, which enable engineers to manage design parameters that may change. By modifying relevant parameters, engineers can automatically generate a customized version of a generic design [Paragraph 9].

Both Kudo et al. and Deitz are directed towards the art of designing and manufacturing customized product orders. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include the step of storing previously generated CAD parameters, because the resulting combination would enable users to update toolpaths, assembly drawings, and replace generic engineering instances with specific customer-specified ones, actions

that will result in an increase in the user's productivity and a reduction in the design cycle time.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kudo et al. to include the step of only storing CAD parameters (and not the entire drawing) because the resulting combination would eliminate the redundant CAD drawing (as the CAD drawing can be generated using the CAD parameters) and also reduce the amount of memory required, reducing the data maintenance costs incurred.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Myers et al. (US Patent #6,961,687) – Product Data Management System.

Sakayori et al. (PgPUB US2002/0002516) – Parts ordering and management system.

Keener (US Patent #6,686,914) – automatically translating geometric data for CAD model systems.

Rappoport (US Patent #6,614,430) – exchange of CAD data.

Tomm et al. (US Patent #6,757,739) – automatically converting the format of an electronic message.

Bengston (US Patent #6,728,947) – workflow distribution apparatus and method.

Cho et al. (US Patent #6,754,677) – facilitating information exchange between enterprise sources.

Helgeson et al (US Patent #6,643,652) – managing data exchange among systems in a network.

Ogawa et al. (US Patent #5,608,874) – automatic data file format translation and transmission.

Integration of ERP/PDM systems with CAD systems/drawings

Brian Tinham's "Your ERP systems is in: What now?" (reference 1-V)

"Making the PDM-to-CAD connection" (reference 1-W)

Mary Weil's "Some asembly required" (reference 1-X)

"Approaching PDM from the other side!" (reference 2-U)

Richard Bourke's "Product Data Management: More Than Just an ERP Module". (reference 2-V)

Anne Gregory's "Keeping Product Data Concurrent". (reference 2-W)

Alorie Gilbert's "ERP Vendors Move Into The Integration Market". (reference 2-X)

Dan Deitz's "Customer-driven manufacturing". (reference 3-U)

Harry Baymgartner's "A STEP to improved CAD". (reference 3-V)

Gene Thomas' "Product configuration for "to-order" industries". (reference 3-W)

Richard Bourke and Lisa Kempfer's "Achieving success with mass customization: The vital contribution of engineering". (reference 3-X)

Lisa Kempfer's "Speeding products to market". (reference 4-U)

Dean Palmer's "Spoilt for choice?" (reference 4-V)

Colin White's "Analytics on Demand: The Zero Latency Enterprise". (reference 4-W)

"Why your company needs Collaborative Product Commerce". (reference 4-X)

Martin Hardwick's "STEP Data Exchange Standard Moves Into Implementation Phase". (reference 5-U)

"The ISO STEP Standards" (reference 5-V)

Tom Thomas' "Entire Supply Chains Must Standardize Electronic Data Protocols". (reference 5-W)

Rajeev Kumar and P.S Midha's "A QFD Based Methodology For Evaluating A Company's PDM Requirements For Collaborative Product Development". (reference 5-X)

Michael Pratt's "Introduction to ISO 10303 - the STEP Standard for Product Data Exchange". (reference 6-U)

Matthew Peach's "CAD Translator Eases Collaborative Developments".

(reference 6-V)

Lawrence Gould's "STEP: Will It Finally Hit Stride?". (reference 6-W)

Ann Wrightson's "XML Study Notes". (reference 6-X)

Paul Dvorak's "Getting Ready to Collaborate". (reference 7-U)

David Loffredo's "Fundamentals of STEP Implementation". (reference 7-V)

David Eggleston's "PDM Streamlines Product Development". (reference 7-W)

"NEC Systems, Inc. Launches Product Data Management Software Suite for North American Market".(reference 7-X)

"NEC Systems, Inc. Shows Obbligato II Product Data Management Software Suite at M/TECH '99". (reference 8-U)

"CIMdata Spells it Out for Engineers: C-O-L-L-A-B-O-R-A-T-E". (reference 8-V)

Preston Gralla's "A Primer On Standards That Are Currently Used In The CAD-CAM Arena". (reference 8-W)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Choi whose telephone number is (571) 272 6971. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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February 17, 2006

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